

## A-Core Container

# Adc for hybrid energy in communication base stations



## Overview

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What are hybrid ADCs used for?

Hybrid ADCs are used in many different fields where the application demands particular performance trade-offs. The following are some of the major applications that could profit from hybrid ADCs: Communication Systems: Hybrid ADCs find utility in wireless communication systems, including cellular base stations and software-defined radios.

Why do hybrid beamforming systems need a mixed ADC configuration?

The reason is that the sub-arrays of hybrid beamforming must focus on a single user. Evaluations with mixed ADC configurations showed that such systems can achieve different achievable rate and energy efficiency values around the ones achieved by a uniform ADC configuration. Future extensions should consider the following points.

Are low resolution ADC digital beamforming systems more energy efficient?

This shows that this approach can achieve all possible different values in the rate - energy efficiency trade-off. The evaluations in this paper showed that low resolution ADC digital beamforming systems are more energy efficient and achieves a higher rate than hybrid beamforming systems for multiuser scenario.

What is a hybrid ADC (analog-to-digital converter)?

A hybrid ADC (Analog-to-Digital Converter) is an innovative category of ADC that amalgamates features from diverse ADC architectures to attain enhanced performance, efficiency, or functionality.

Does LTE have a high resolution ADC?

Current Long Term Evolution (LTE) systems have a limited amount of antennas at the base and mobile stations. Since the bandwidth is relatively narrow, the power consumption of a receiver Radio Frequency (RF) chain with

a high resolution ADC at each antenna is still feasible.

What is a flash-SAR hybrid ADC?

The Flash-SAR hybrid ADC is a perfect example of a device that balances speed, resolution, and power consumption to meet the demands of digital communications. It illuminates a way toward improved designs made especially for particular applications and serves as an inspirational model for ADC researchers and practitioners.

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